SOLICITATION FOR PROPOSALS

FOR THE JOINT
NATIONAL NUCLEAR SECURITY ADMINISTRATION/
AIR FORCE RESEARCH LABORATORY

BROAD AGENCY ANNOUNCEMENT
FOR FISCAL YEAR 2010 AWARDS (BAA10)
REGARDING NUCLEAR EXPLOSION MONITORING
RESEARCH AND DEVELOPMENT

SOLICITATION NUMBER DE-AR52-09NA29249

Issuing Office:	U.S. Department of Energy National Nuclear Security Administration Service Center
Date Issued:	April 30, 2009
Proposals Due:	**June 15, 2009**

Contract Specialist: Mr. Ray James Sisneros
This Solicitation and any Amendments are available via the Internet at:
http://e-center.doe.gov/

This Page Left Blank Intentionally

TABLE OF CONTENTS

SECTION TITLE **PAGE**

I. Solicitation Scope and Research Topics

A. Summary

The National Nuclear Security Administration (NNSA) and the Air Force Research Laboratory (AFRL) are jointly soliciting proposals for the research and development needs described herein. This Broad Agency Announcement (BAA) constitutes the actual solicitation for this requirement as publicly synopsized with a Notice of Interest issued on February 18, 2009 and posted on the U.S. Department of Energy (DOE) e-Center Procurement Web Page at http://e-center.doe.gov/. The solicitation is posted on the DOE e-Center Procurement Web Page at http://e-center.doe.gov/, at Fedbizopps.gov, and at Grants.gov. The BAA closes and proposals are due on June 15, 2009.

The NNSA and the AFRL invite proposals for research and development (R&D) to improve national capabilities to detect, locate and identify nuclear explosions in support of the Air Force Technical Applications Center (AFTAC), the U.S. government agency responsible for operation of the nuclear explosion monitoring systems. The NNSA Office of Nuclear Detonation Detection (NA-222) within the Office of Nonproliferation Research and Development (NA-22) has the responsibility to apply the broad base of U.S. expertise that has been acquired in testing nuclear weapons and support disciplines to improve national capabilities to detect, locate and identify nuclear explosions and to provide cost-effective technologies, algorithms, hardware, and software to U.S. government agencies that are responsible for nuclear explosion monitoring. The AFRL has the responsibility to execute Department of Defense (DoD) R&D related to nuclear explosion monitoring.

Research products under this solicitation shall support Air Force's national nuclear explosion monitoring mission requirements and will be integrated by the NNSA into product deliveries, to AFTAC (the end user). Information about the NNSA Nuclear Explosion Monitoring Research & Development (NEM R&D) Program integration of AFRL and NNSA research products into operational form for the Air Force can be found online at https://na22.nnsa.doe.gov/KnowledgeBase.

Proposals must be submitted to receive an award. The NNSA and AFRL reserve the right to determine the type of award instrument to use, and which is appropriate to the scope of work. In general, contracts are used when definitive products, hardware, or software will be delivered, when there is extensive coordination and direction required from the government during the execution of the Statement of Work, or when the deliverables directly contribute to a specific government program. We anticipate most awards from this solicitation to be contracts.

Responses are requested from responsible organizations (foreign and domestic) including those from private industry, academic institutions, research institutions and non-profit organizations. NNSA and AFRL are strong advocates for the small business community and interested small businesses, small business-lead teams, and joint ventures that qualify as small businesses are especially encouraged to submit proposals under this BAA. Federal agencies may submit proposals subject to appropriations language, but may not partner with Federally Funded Research Development Centers (FFRDCs) in order to not violate Federal Acquisition Regulation

(FAR) FAR 35.017 (a)(2), which prohibits competition with the private sector. Similarly, FFRDCs, including the NNSA national laboratories, cannot directly respond to this solicitation as prime/lead contractors, but can participate in this solicitation as subcontractors or team members. For-profit organizations that respond to this notice should indicate whether or not they are a small business, a socially and economically disadvantaged business, or a woman-owned business. Educational institutions that respond to this solicitation should indicate if they are Historically Black Colleges or Universities or Minority Institutions. Offerors are to be registered in Central Contractor Registration (CCR) at http://www.ccr.gov/.

Awards under this solicitation are subject to the availability of funds. It is estimated that 5 to 10 awards will be made under this solicitation, but the exact number of awards is unknown. Due to anticipated low funding availability, low-cost proposals, focused on validation or proof-of-concept, have increased programmatic value. Acceptance of a proposal for evaluation does not obligate NNSA or AFRL to make an award. NNSA and AFRL reserve the right to fund, in whole or in part, any, all or none of the proposals submitted in response to this solicitation. NNSA and AFRL do not intend to conduct discussions, but may do so at their discretion.

B. Nuclear Explosion Monitoring Research and Development Background

NNSA and AFRL invite proposals for nuclear explosion monitoring research and development under Solicitation Number DE-AR52-09NA29249. NNSA's Office of Nuclear Detonation Detection (NA-222) within the Office of Nonproliferation Research and Development (NA-22) is managing this solicitation. The Threat Detection Section of the Battlespace Surveillance Innovation Center of the Space Vehicles Directorate is managing this solicitation for AFRL. This solicitation requires proposals to be submitted electronically, as explained in the section III. B "Electronic Submission of Proposals".

C. Technical Scope and Research Topics

Research is being sought in the topic, and topic sub-areas below:

TOPIC 1: Radionuclide Studies
TOPIC 2: Regional Seismic Studies
TOPIC 3: Seismic Phenomenology
TOPIC 4: Seismic Methods in 3-D
TOPIC 5: Infrasound Studies
TOPIC 6: Hydroacoustic Studies

Topic 1: Radionuclide Studies

1a. Xenon Measuring Instrument. Proposals are sought for the development of compact instrumentation for the quantification of stable xenon as part of a radioactive xenon monitoring instrument with the objective of determining the total amount of stable xenon in a mixed gaseous sample (xenon in nitrogen) from independent measures of pressure, temperature and mole fraction of xenon in order to calculate the stable volume (standard cc's). This measurement is challenging due to the low pressures (1-100 torr) expected during the quantification, placing constraints on the binary gas analysis technique therefore it is expected that new gas sensing technologies will be developed under this project.

The combined relative uncertainty (random and systematic) in the reported volume should be less than 1%. The technology should be robust, field deployable and not require regular calibration (6 months between calibration checks). The anticipated quantity of xenon available for the measurement is 0.25 cm^3 (standard temperature and pressure). The amount of nitrogen is anticipated to be in the range of 0.25 – 0.75 cm^3 (STP). A desired outcome from this work would be a compact instrument or technique usable for both laboratory and automated and unattended field measurements.

1b. Elimination of Radioxenon Memory Effect. Proposals are sought for the development of detectors, materials and/or components that can be used for beta-gamma coincident spectrometry gas cells, such as used in the Automated Radioxenon Sampler-Analyzer (ARSA), that exhibits very low or no appreciable memory effect for radioxenon samples in contact with the detector surfaces for >24 hrs. A useful detection system will be rugged enough for field use, and be possible to obtain in quantity. The materials used in a beta-gamma gas cell should allow high detection efficiency at low energy (~30 keV) x-rays and betas up to 1 MeV, and also allow for high resolution (<15% desired) detection of conversion electrons in the range of 100-200 keV.

1c. Portable Xenon Calibration Sources. Proposals are sought for portable equipment that can be used to produce low activity level, calibrated radioactive gaseous xenon calibration sources. These sources should be compatible with commercial low level radioactive xenon detection systems and therefore concentrations in the range of 1-10 Bq per sample of radioactive xenon is the desired range. This research must also address a technique to verify that the calibrated xenon sources are reproducible to significantly better than 10% accuracy. Successful proposals will address the production of isotopes such as ^{133m}Xe and ^{135}Xe, as well as the more common ^{133}Xe. Production of these xenon isotopes singly and in combinations are desired, while minimizing the contamination of ^{133}Xe and ^{131m}Xe in the samples.

1d. Xenon Sources and Background. Proposals are sought for the study of source terms for Xe producing natural, medical, industrial, military and nuclear processes, the fate and transport of the Xe released and the regional backgrounds that might be encountered.

Topic 2: Regional Seismic Studies

2a. Velocity Models. Proposals are sought that develop advanced models of the Earth's velocity structure with predictive capability, especially in aseismic regions and in Eurasia. Of particular interest are: new techniques of determining 3-D, spatially variable velocity models; techniques for building models by fitting multiple datasets, especially of different types of data; techniques to estimate the uncertainty in geophysical models and assess the tradeoffs between different parameters of the models, as well as the uncertainty in predicted observables, such as travel times; studies that compare different methods to show their strengths and weaknesses; and models that can predict seismic amplitudes as well as travel times. Consideration should be given to issues relating to integration of models into operational use, such as supplying metadata, including the data used to derive and test the model, how the model is represented, resolution and reliability at the boundary of the model. Priority will be given to studies of Eurasia. The influence of laterally-varying 2-D, 2.5-D, and 3-D structures, including 3-D scattering, on the stability of propagation of Pn, Pg, Sn, and Lg phases and how these phases propagate to local (less than 200 km) and regional distances (less than 2,000 km) are of interest.

2b. Attenuation Models. Proposals are sought to develop local and regional attenuation models, with emphasis on their ability to match observed amplitudes of Pn, Pg, Sn, and Lg phases, their codas, and surface waves. Proposals to develop new methods for measuring attenuation, to estimate uncertainty in attenuation models, and to develop models that fit multiple datasets (e.g. body wave and surface wave amplitudes), are of interest.

2c. Location and Discrimination Ground Truth. For seismic location calibration, collection of ground truth at a GT5 level (absolute location and depth errors less than 5 kilometers) or better, including dedicated explosions, is sought for events of magnitude 2.5 and larger. Research on new methods of acquiring location ground truth will be accepted under this topic. Studies that generate new discrimination ground truth events, along with source geometry and other characterizing information, are sought. Waveform data, both the data used to define ground truth and any other data generated by the event, are desired. Calibration of regional coda magnitude is of interest.

Topic 3: Seismic Phenomenology

3a. Seismic Energy Generation. Proposals are sought that complement existing efforts to understand how seismic energy is generated from a range of sources (explosions, earthquakes, mine collapses, and other modes of rock failure), and how energy is partitioned between P, S, and surface waves. Experiments to improve physical understanding of the generation and initial propagation of these wave types are of interest. Improved explosion source models, both empirical and theoretical, which can predict observed P, S, and surface wave amplitudes over a wide range of frequencies are sought. New methods of estimating the yield of fully coupled explosions, how emplacement conditions affect the observations, and the effect of multiple simultaneous and near-simultaneous explosions, are of interest. Proposals for theoretical and observational investigations will be accepted under this topic.

3b. Local and Regional Monitoring and Discrimination. Proposals are sought that would produce new understanding of the properties of small seismic events and their seismic waveforms at local (200 km or less) and regional (2000 km or less) distances. Innovative methods of event detection that are appropriate for local events are of interest. Of particular

interest are methods for estimating yield, with low uncertainty, of seismic events recorded at local distances. New methods for discriminating explosions from earthquakes that have a firm physical and statistical basis are of interest. Methods that can discriminate distributed from single-point explosions are also of interest.

Topic 4: Seismic Methods in 3-D

Methods appropriate for use in 3-D models, including the determination of such models, are sought. Methods to calculate travel times that are accurate (within 0.01 sec), rapid, and complete (all phases without ambiguity), or any combination of these, are sought; however, accuracy should be at least 0.1 sec. Proposals that examine such questions as what resolution is needed or optimal to obtain a desired accuracy in path travel times or attenuation, and/or what the accuracy that can be expected from a given model, will be considered under this topic. Rapid and accurate methods to compute synthetic seismograms in 3-D media that offer significant advantages over current methods, particularly at high (> 1 Hz) frequencies are desired. Improved techniques for event location in 3-D using models and/or ground truth are sought at local, regional or near-teleseismic distances, particularly methods that use more than a single type of data jointly. Robust estimation of uncertainty is of importance.

Topic 5: Infrasound Studies

5a. Seismo-Acoustics. Proposals are sought on the interpretation of signals from co-located infrasound and seismic sensors at local and regional distances. Improved understanding of the fundamental physics of generation of infrasound from underground and near-surface explosions and other sources is desired. The maximum infrasound signal expected from events that do not have a surface component of energy release, such as shallow earthquakes, and the nature of such a signal (impulsive or emergent) are of interest. Proposals that examine scaling of peak frequency and/or amplitude with (effective) source yield at local or regional distances are sought. Experimental, observational and theoretical studies are of interest.

5b. Propagation. Propagation of infrasound signals to local and near-regional distances (less than 1,000 km) is of interest, particularly the phenomenology governing reception and characteristics of infrasound signals within the so-called zone of silence. Atmospheric conditions that affect detection, phase association, yield estimation, and event identification are of particular interest. Another topic of interest is the uncertainty in azimuth and range determinations for infrasound signals from seismic events at local and regional distances.

Topic 6: Hydroacoustic Studies

We do not anticipate funding proposals for hydroacoustic studies, however, proposals which would significantly enhance nuclear explosion monitoring through hydroacoustics or which present a unique opportunity in hydroacoustic studies may be submitted for review.

**********END OF TOPICS**********

D. Teaming Considerations

Teaming with organizations of advanced technical and scientific competencies enhances programmatic value and is encouraged. Low-cost proposals focused on validation or proof-of-principle issues will enhance programmatic value. Teaming is also an interesting way to add value; for example, teaming to facilitate integration of research products into the AFTAC Knowledge Base will enhance programmatic value. Teaming which results in training of graduate students (in particular university/industry teams working on real world problems with Ph.D. candidates) will enhance programmatic value. Programmatic value is one of the selection criteria. Teaming may be proposed among organizations including those from universities, the private sector, Federal agencies, Federally Funded Research and Development Centers (FFRDCs), and other organizations. Federal agencies may submit proposals subject to appropriations language for the Fiscal Year (FY) for which awards will be made, but may not partner with FFRDCs in order to not violate the FAR [see FAR 35.017 (a)(2)] prohibition of competition with the private sector. One organization must be designated the lead organization and one individual from the lead organization must be designated as the lead principal investigator. The lead organization will be accountable for the full team effort and will be responsible for integration, management, and reporting for the team.

Proposals from teams should state the intended benefits of the teaming arrangement, particularly in terms of the proposed research product. The team, for merit review and product management purposes, should submit one integrated proposal, including one Technical Proposal. However, to effectively manage funding allocated to this solicitation, NNSA and AFRL may choose to fund team members that are Federal agencies or FFRDCs directly through appropriate funding vehicles, such as Work for Others Agreements, Interagency Agreements, or NNSA Approved Funding Plan (AFP) Process, rather than through the team leader (i.e. through the prime contractor or prime financial assistance recipient). For this reason, the technical approach, deliverables, and costs must be clearly separable and delineated for each team member to allow separate funding of each Federal agency or FFRDC on the team. Although NNSA or AFRL may choose to directly fund any federal agency or FFRDC team member, such team member's role in the team effort shall continue to be limited to that which is described in the statement of work for the prime contract or financial assistance award, and such team member shall continue to be subject to the direction and control of the team leader in accordance with any applicable agreements between NNSA/AFRL, the team leader, and the FFRDC or Federal Agency. Team leaders shall continue to be responsible for the conduct and outcome of the overall project. Refer to Section II for more detail on team proposal requirements. The lead organization will be responsible for awarding subcontracts to team members who are not Federal agencies and FFRDCs.

Under this solicitation, FFRDCs, including the NNSA national laboratories, can only participate as team members. FFRDCs, including the NNSA national laboratories, will be accessible to any lead organization wishing to discuss teaming arrangements, and will equally evaluate and accommodate all requests for teaming arrangements.

1. Participation by Federally Funded Research and Development Centers

FFRDC's are not eligible for a prime contract award under this solicitation, but they may be proposed as a team member subject to the following guidelines:

- **Authorization for non-DOE/NNSA FFRDCs.** The Federal agency sponsoring the FFRDC must authorize in writing the use of the FFRDC on the proposed project and this authorization must be submitted with the proposal. The use of a FFRDC must be consistent with the FFRDCs authority under its contract and must not place the FFRDC in direct competition with the private sector per the FAR.

- **Authorization for DOE/NNSA FFRDCs.** The DOE/NNSA Site Office Contracting Officer for the participating FFRDC must authorize in writing the use of a DOE/NNSA FFRDC on the proposed project and this authorization must be submitted with the proposal. The following wording is acceptable for this authorization.

  "Authorization is granted for the _____ Laboratory to participate in the proposed project. The work proposed for the laboratory is consistent with or complimentary to the missions of the laboratory, will not adversely impact execution of the DOE assigned programs at the laboratory, and will not place the laboratory in direct competition with the domestic private sector."

- The FFRDC effort shall not approach or exceed 50% of the total effort. The intent of the FAR is that the FFRDC may not play more than a minor role in the teaming arrangement and work effort.

2. Responsibility

The offeror, if successful, will be the responsible authority regarding the settlement and satisfaction of all contractual and administrative issues, including but not limited to disputes and claims, arising out of any agreement between the offeror and the FFRDC.

E. Performance Period

The performance period will begin after selection and award (planned for early in the second quarter of fiscal year 2010) and will be between 1 and 3 years. (See Section V.A, "Award and Notification.")

II. Proposal Requirements

A. Proposal Preparation Requirements

Proposal information is requested to be submitted in four volumes. The information content of each volume is used in different parts of the acquisition process and facilitates different tasks. Volume 1/Proposal Summary is used for accounting and identification purposes in a variety of ways. The top level cost information in Volume 1 is the primary cost information used during the merit review. Volume 2/Technical Proposal is used for the technical merit review and is evaluated according to Criteria 1-4 [see section IV.B for definitions]. Also, the section in Volume 2c is the starting point for Statements of Work for successful offerors. Volume 3/Cost Proposal and Volume 4/Business Management Proposal are not part of the merit review but are available reference material to the Source Evaluation Board in their ranking discussions taking into account Criteria 5. However, Criteria 5 is applied primarily to information in Volume 1 and 2. The primary purpose of Volume 3 and 4 is to provide the detailed information needed by the procurement process of those few proposals that are selected by the Source Evaluation Board to go to negotiations.

The Proposal must contain the following information by volume as described in Section III.B "Electronic Submission of Proposals".

1. Volume 1/Proposal Summary

The following information must be included in Volume 1/Proposal Summary:

a. Statement that the document is a Proposal;
b. Solicitation Number;
c. Topic/subtopic number that the proposal is submitted under;
d. Proposal Title;
e. Name and address of Lead Institution;
f. Full Name (including title and middle initial), mailing address, telephone number, fax number, electronic mail address of Lead Principal Investigator;
g. Full Name (including title and middle initial), mailing address, telephone number, fax number, electronic mail address of Lead Institution Contract Administrator point of contact;
h. Name(s) of Team Organizations;
i. Full Name(s) (including title and middle initial), mailing address, fax, telephone(s), email(s) of Principal Investigator(s) of Team Organizations;
j. Full Name (including title and middle initial), mailing address, telephone number, fax number, electronic mail address of Proposal Preparer;
k. Any concerns regarding the use of non-Government reviewers during the review process;
l. Summary table showing total proposed costs and costs by year for lead organization and for each team member;
m. Total equipment costs and first year's equipment costs;
n. Submission date, proposed period of performance, offer acceptance period;
o. Indicate if the Lead Institution is a Historically Black College or University or Minority Institution;

p. State if proposal contains any proprietary information, see Section II.B.3;
q. Indicate if the Lead Institution is a small business, a socially and economically disadvantaged small business, or a woman-owned small business;
r. Statement of whether or not use of IRIS PASSCAL seismic equipment is proposed; and
s. Abstract: a brief (350 words or less) summary of the proposal that succinctly states the major technical deliverable(s) intended from the proposed work.

2. Volume 2/Technical Proposal

The Technical Proposal should comply with the following rules. Proposals are to be formatted for 8.5 x 11-inch paper with 1-inch margins in type not smaller than 12 point. The Technical Proposal length shall not exceed 30 single-spaced pages. For a proposal that contains a Technical Proposal that exceeds the applicable page limit, only the first 30 pages of the Technical Proposal will be used for evaluation purposes. The Technical Proposal should have any proprietary data clearly identified and separable as described under Section II.B.3 "Proprietary Proposal Information". The Technical Proposal should specifically address the Evaluation Criteria in Section IV.B of this Solicitation.

Do not attach imbedded electronic files, such as movies, which require large areas of file space. These types of electronic files that are included with your submission are unlikely to be reviewed and may even be deleted prior to being uploaded to servers in order to conserve file space.

The Technical Proposal is comprised of the following components:

a. Technical Proposal Identifier Information and Abstract (approx. 1 page). The technical proposal identifier information must repeat key information from Volume 1, specifically,

- Solicitation Number;
- Topic Number;
- Proposal Title;
- Name of Lead Institution;
- Name, mailing address, telephone number, fax number, and electronic mail address of Lead Principal Investigator;
- Name(s) of Team Organizations;
- Name(s), mailing addresses, telephone numbers, fax numbers, and electronic mail addresses of Principal Investigator(s) of Team Organizations;
- Statement whether or not use of IRIS PASSCAL seismic equipment is proposed;
- Statement of Equipment to be purchased, if any, and purpose for equipment; and
- Abstract: a brief (350 words or less) summary of the proposal that succinctly states the major technical deliverable(s) intended from the proposed work. If this proposal is a resubmission of a prior year proposal, please state what improvements were made to the proposal (e.g., to address previous review comments).

- Add the following as a footer to all pages of Volume 2/Technical Proposal:

"This proposal shall be used and disclosed for evaluation purposes only, and a copy of this Government notice shall be applied to any reproduction or abstract thereof. Any authorized restrictive notices which the submitter places on this proposal shall also be strictly complied with. Disclosure of this proposal outside the Government for evaluation purposes shall be made only to the extent authorized."

b. Technical Narrative (approx. 15 – 20 pages). The technical narrative is to provide a detailed description of the proposed research, including the research objectives, the methodology and approaches for accomplishing those objectives, the anticipated results of the research, the relevance of the proposed research and anticipated results to the program objectives stated in Section I.C, "Technical Scope and Research Topics." It should describe the purpose of the research, provide a review of previous and ongoing work, and identify any technical issues that need to be solved.

The technical narrative should be written as a clear, concise statement of the work proposed and specifically address review Criteria 1-4 (see Section IV.B): Relevance to Mission, Overall Scientific and Technical Soundness, Risk Assessment, and Research Duplication. Regarding the Relevance to Mission section, a clear statement of how the work proposed will improve national capabilities and advance national technical means to detect, locate and identify nuclear explosions will help reviewers know that the offeror has focused the research on what is important. Similarly, to facilitate review of the Overall Scientific and Technical Soundness section, a concise and clear description of the methods, approach, possible sources of error, and validation of research results (if appropriate) will provide evidence to the reviewer that the offeror understands the technical approach being proposed. It may be appropriate to include information that offeror considers obvious, to avoid the possibility of a reviewer down-rating the proposal because information (e.g. particularly the statement of the method of statistical validation) was omitted. In the section on Risk Assessment, proposals should explain why the research proposed is likely to produce useful results. The discussion of Research Duplication section should provide evidence about whether or not the research proposed would duplicate or complement other research.

The narrative includes any tables, figures, and references. Facilities, equipment and other resources of the offeror that will be used in the performance of the proposed research should be described. Any proposed usage of PASSCAL equipment must be explicitly detailed. Any collaborators should also be identified. Proposals from teams should state the intended benefits of the teaming arrangement.

c. Work Plan and Schedule (approx. 4 – 6 pages). This component provides a prose description of the work breakdown structure for the project. **What the Government is attempting to accomplish with this proposal component is to have the offeror provide an almost contract-ready Statement of Work.** The research objectives are to be identified along with the major tasks that must be completed to accomplish the stated objectives; including their duration with projected start and end dates. Each task is to be divided into its subordinate subtasks and associated key decision points (milestones) and

specify which team organization participates in each task. Include a table of tasks versus time (in weeks or quarters).

Deliverables and their due dates are to be identified separately by task. Deliverables include reports, data, hardware, software, and documentation, as applicable. For team proposals, the lead organization's technical proposal is to distinguish the technical role and contributions of each team member. The offeror should plan on attending and fully participating in the Monitoring Research Review, including paper preparation and submission, and travel. Any other proposed travel such as attending a professional society meeting, meeting with the Product Integrator, or any international travel must also be listed including a statement of purpose and value to the US government for the travel.

d. Key Personnel. The proposal must identify all key senior personnel involved in the project. The proposal must include curricula vitae (background and experience information including a list of relevant publications, if any) of the principal investigator and other key personnel. Any changes to key personnel during the project will need the concurrence of the appropriate NNSA or AFRL Contracting Officer.

3. Volume 3/Cost Proposal

The Cost Proposal includes a statement of the offeror's costs to perform the proposed work. The costs should be commensurate with the proposed tasks.

The Cost Proposal must include detailed supporting cost schedules and breakdowns for the phases identified in the proposed Technical Approach by task and subtask, and include yearly cost information with written justification for each cost item, especially items of equipment.

All facilities, equipment, and supplies needed to implement the proposed research must be identified in the cost proposal and must specify whether the dollars requested cover purchase, rental, or borrowing of each item. Any facilities, equipment, or any other non-monetary resources that are required of the Government must be itemized. Any intention of borrowing equipment from the IRIS PASSCAL Equipment Center must be made explicitly in the proposal.

Direct labor costs and associated fringe are to be provided for each proposed labor category. Travel costs are to be itemized by airfare, local travel, per diem and miscellaneous expenses per traveler per destination. The purpose of the trip(s) must also be included. Overhead rates, fees (if applicable), and taxes are also to be specified. Sufficient costs should be proposed to cover appropriate travel costs including, but not limited to, the annual Monitoring Research Review (MRR) at http://www.monitoringresearchreview.com, other program reviews, coordination meetings with NNSA Product Integrators, and fieldwork.

Separate cost proposals should be submitted for each research organization including the lead organization and each member on the team.

If a proposal is selected and a cost reimbursement contract will be awarded, the cost proposal may require revision to meet the requirements of FAR 15.408, Table 15-2, "Instructions for Submitting Cost/Price Proposals when Cost or Pricing Data are Required."

4. Volume 4/Business Management Proposal

The Business Management Proposal consists of administrative forms and certifications. All administrative forms are available electronically in DOE's e-Center Industry Interactive Procurement System (IIPS) as described in Section III.B.4, "Forms". The following Business Management Proposal requirements apply only for the lead organization. Business Management Proposal information for federal agencies or FFRDCs is not required.

The Business Management Proposal must include the following:

a. Standard Form SF-33, Solicitation, Offer and Award.
b. Negotiated indirect rate information. Please provide the name of the negotiating agency and point of contact with e-mail and/or telephone number, in addition to a copy of the latest approved rates from your cognizant federal agency.
c. Representation, Certification, and Other Statements of Offeror (Reps & Certs): Required to register on the Online Representations and Certifications Application (ORCA) website at https://orca.bpn.gov/.
d. Contract and Financial Assistance List: A list of current and pending government contracts and financial assistance agreements is to be provided by title, sponsoring agency, solicitation reference, and brief description.
e. Past and Present Performance Information: Descriptions of related past and current efforts and results during the past 5 years are to be provided along with points-of-contact/reference and contract numbers.
f. NEPA Environmental Checklist Form (See Section II.B.5) is required from the Lead Organization only if the proposed work involves using explosives, energetic materials, or chemicals.

B. Other Proposal Preparation Factors

This section addresses other considerations and requirements or further explains proposal requirements.

1. Eligibility Requirements

Proposals must be: 1) signed by an individual who is authorized to commit the Proposing Organization; and 2) must commit the offeror Organization to comply with the terms and conditions of the award, if awarded. (Principal Investigators are not generally authorized to act for their institutions). FFRDCs, including the NNSA national laboratories, cannot respond to this solicitation as the prime/lead organization.

2. False Statements

Proposals must set forth full, accurate, and complete information as required by this solicitation. The penalty for making false statements is prescribed in 18 U.S.C. 1001.

3. Proprietary Proposal Information

Proposals submitted in response to this solicitation may in principle contain trade secrets and/or privileged or confidential commercial or financial information, which the offeror does not want used or disclosed for any purpose other than evaluation of the proposal. The use and disclosure of such data may be restricted, provided the offeror marks the cover sheet of the proposal with the following legend and specifies the pages of the proposal which are to be restricted in accordance with the conditions of the legend:

> "The data contained on pages (specify) of this proposal have been submitted in confidence and contain trade secrets or proprietary information, and such data shall be used or disclosed only for evaluation purposes, provided that if this offeror receives an award as a result of or in connection with the submission of this proposal, NNSA and AFRL shall have the right to use or disclose the data herein to the extent provided in the award. This restriction does not limit the government's right to use or disclose data obtained without restriction from any source, including the offeror."

Further, to protect such data, each page containing such data must be specifically identified and marked, including each line or paragraph containing the data to be protected with a legend similar to the following:

> "Use or disclosure of the data set forth above is subject to the restriction in Volume 1/Proposal Summary portion of this proposal."

It should be noted, however, that data bearing the aforementioned legend may be subject to release under the provisions of the Freedom of Information Act (FOIA), if NNSA, AFRL, or a court determines that the material so marked is not exempt under the FOIA. The Government assumes no liability for disclosure or use of unmarked data and may use or disclose such data for any purpose. The offeror may request that proprietary information not be disclosed to non-Government reviewers. Such information should be clearly marked and separable, so that the information may be removed prior to submitting the proposal for review.

4. Proposal Preparation Costs

No funding will be available under the NNSA Minority Economic Impact (MEI) loan program for preparation of proposals in response to this solicitation. NNSA assumes no responsibility for any costs associated with the proposal preparation or submission of proposal if an Award is not made. If a contract is awarded, such costs may be allowable

as provided in the applicable cost principles, the contractor's approved accounting system, and the FAR.

5. National Environmental Policy Act (NEPA) Requirements

Only proposals that propose work using explosive, energetic material, or chemicals must include an Environmental Checklist. For proposals with a teaming arrangement, only the lead offeror need complete an Environmental Checklist that covers the team's efforts. This checklist is to be completed at the time of proposal submission and be included in the Business Management Proposal as indicated in Section II.A.4. The Environmental Checklist consists of a series of questions designed to gather information in the following general areas as related to the proposed project: chemicals, waste generation, emissions, permitting, natural resources and any unique or controversial issues. The requested information will be used by NNSA and AFRL to evaluate any potential impacts (positive and negative) on the environment and, accordingly, contain sufficient detail for each Agency to meet its requirements under NEPA.

Offerors are restricted from taking any irreversible action prior to NNSA and/or AFRL reaching a final NEPA decision regarding the proposed project. Irreversible actions include demolition of existing buildings, site clearing, ground breaking, construction, and/or detailed design. This restriction, however, does not preclude the offeror from developing plans, preliminary designs, or performing other necessary support work prior to the funding Agency reaching its final NEPA decision, provided the work has been authorized by NNSA or AFRL.

III. Proposal Submission Requirements

A. Overview

Proposals must be received prior to **5:00 PM Eastern Time (3:00 PM Mountain Time) on June 15, 2009**. Proposals will be considered late and disqualified from consideration if any part of the proposal is submitted/time-stamped after the **5:00 PM Eastern Time (3:00 PM Mountain Time) on the June 15, 2009** deadline.

Proposals **must be submitted electronically** using IIPS in accordance with the instructions in Section III. B, "Electronic Submission of Proposals." Proposals submitted through any other method such as, the U.S. Postal Service, facsimile, telegraphically, courier companies, or hand-delivered hard copies will be considered non-responsive and will be disqualified from further consideration. Proposals will not be returned to the offerors. Proposals shall consist of four volumes: Volume 1/Proposal Summary, Volume 2/Technical Proposal, Volume 3/Cost Proposal, and Volume 4/Business Management Proposal, as described in this solicitation. No administrative or cost data shall be included in the Technical Proposal.

It is anticipated that research under this solicitation shall generally be unclassified. Some efforts, however, may be classified. Offerors for classified efforts may use up to five pages of the 30-page limit on the Technical Proposal for a classified annex, following appropriate classification guides. Since some of the guides are classified, personnel and facility clearances must accompany the request. **Do not submit any classified information on IIPS**. To obtain instructions on the process for submission of classified proposals, such offerors may contact the Contracting Specialist. If classified information is required to be submitted as part of a proposal and that proposal is selected for negotiations leading to award, then that award must be a contract since financial assistance awards do not allow for the production of classified information.

The Proposal must contain the following information broken into IIPS volumes as described in Section III.B.1.

B. Electronic Submission of Proposals

Proposals **must be submitted electronically** through IIPS, which is accessed online at: http://e-center.doe.gov . ***Offerors are advised to begin submission at least 48 hours in advance of the deadline in order to avoid any submission difficulties.*** IIPS provides the medium for disseminating solicitations, receiving proposals, and awarding proposals in a paperless environment. **SUBMISSION OF PROPOSALS BY MEANS OTHER THAN THE IIPS IS NOT AUTHORIZED.**

Individuals who have the authority to enter their institution into a legally binding contract/agreement and intend to submit proposals via IIPS **must register and receive confirmation that they are registered prior to being able to submit a proposal** on IIPS. There is a short waiting period between registration and the acceptance of registration, typically a day. Offerors are strongly encouraged to register with IIPS as soon as possible

after receipt of this solicitation. Submission of electronic proposals via IIPS will constitute submission of signed copies of the required documents. The name of the authorized company official shall be entered (typed) in the appropriate space shown on the form(s) (e.g., Block 17 of SF-33). Subcontractor submissions of proprietary information may (i) register in IIPS and submit their information separately identifying in the subject line, the solicitation number and to whom they are a subcontractor; or (ii) provide a password protected document (file) to the prime and share the password with the Contract Specialist. Regardless of the option chosen, the subcontractor proposal must adhere to the proposal due date/time stated in the solicitation. See "IIPS Tips" below (Section III.B.3.) for contact information, guidance, and instructions on using IIPS.

Proposals must be submitted as an Adobe Acrobat PDF file, a Microsoft Word file, or a Microsoft Excel file via the IIPS in accordance with the instructions outlined in this solicitation and the IIPS User Guide. However, the Technical Proposal (Volume 2) must also be submitted as a Microsoft Word file.

ALL PROPOSALS MUST HAVE AN IIPS SUBMISSION TIME STAMP PRIOR TO 5:00 P.M. EASTERN TIME (3:00 P.M. MOUNTAIN TIME) ON June 15, 2009.

1. **Submission Instructions**

Offerors are advised to begin transmission at least 48 hours in advance of the deadline in order to avoid any transmission difficulties.

Proposals are submitted in parts and uploaded into designated IIPS volumes. Specific documents must be uploaded into specific volumes. Review these requirements before you compile the documents for your proposal.

Proposals must be complete and all documents must be submitted in one session prior to 5:00PM Eastern Time (3:00PM Mountain Time) on June 15, 2009. Failure to complete the transmission of all documents in one session prior to the deadline will result in an incomplete proposal. IIPS cannot combine partial proposals so incomplete proposals are disqualified from further consideration. Offerors may combine the documents for a specific volume into one file provided that file contains ***only*** those documents required for that volume. Documents and forms may also be submitted as individual files. **Proposals must be filed as an "Acquisition" and proposal documents must be "saved as" Volume 1/Proposal Summary, Volume 2/Technical Proposal, etc… and uploaded into the volumes as follows:**

***Volume 1/Proposal Summary*:**
(See Section II.A.1)
Proposal Summary Information

***Volume 2/Technical Proposal*:**
(See Section II.A.2)
Technical Proposal Identifying Information & Abstract
Technical Narrative
Work Plan and Schedule

Key Personnel

***Volume 3/Cost Proposal*:**
(See Section II.A.3 and Section V. D)
Cost Proposal on Excel spreadsheets
Cost Proposal Justification
Equipment (if requested by offeror, include statement of purpose)
Program travel requirements below (include a breakout of costs for travel)
Annual Monitoring Research Review (MRR)
Annual Midwest Program Review
Annual Meeting with Product Integrator (may be dual purpose with travel to MRR)

***Volume 4/Business Management Proposal*:**
(See Section II.A.4)
Solicitation, Offer and Award (SF-33)
Negotiated indirect rate information (from cognizant federal agency)
Representations and Certifications (Reps & Certs):
(Required to register if selected for an award to the Online Representations and Certifications Application (ORCA) website at https://orca.bpn.gov/)
Contract and Financial Assistance List
Past and Present Performance Information
NEPA Environmental Checklist (if required)

If you make an error uploading files, log out of IIPS and start over. **You must resubmit the entire proposal.** See below further instructions on resubmitting proposals.

2. Amendments and Withdrawal of Proposals

Corrections and Changes: Proposals cannot be altered once they have been submitted to IIPS. Offerors are required to ***resubmit an entire proposal package*** when making any change. Failure to resubmit a full proposal package including all required documents will result in an incomplete proposal. Contractors who wish to have a proposal corrected or changed should submit a request directly to the IIPS helpdesk prior to the response due date/time in writing via e-mail (iips_helpdesk@e-center.doe.gov). The helpdesk will remove the entire proposal. Changes and corrections cannot be accepted after the closing date and time.

Removing Proposals: If you wish to withdraw or make any change to your proposal, the individual who submitted the proposal must make a written request to the IIPS helpdesk as stated above. The request must include the submitter's name, organization, title of the proposal, and the date and time the proposal was submitted. ***The entire original proposal will be removed. The entire replacement proposal, if any, must be resubmitted.***

Duplicate Submissions: In the event an offeror submits two or more proposals with the same title, the proposal with the latest date and time stamp is the proposal that will be accepted. It is not possible to combine submissions. Please follow the guidance above for removing incorrect proposals so that duplicate proposals are not processed in IIPS.

3. IIPS Tips

Refer to the "User Guide For Contractors" by going to the IIPS Homepage at http://e-center.doe.gov and clicking on the "Help" button. The Guide contains minimum system requirements needed for using IIPS and provides detailed instructions for registration, joining the mailing list, submitting questions, proposal response (proposal submission), etc. Should you need additional assistance after reviewing the Guide, please contact the IIPS Help Desk as noted below.

IIPS Help Desk: Hours: 8am – 8pm ET M-F, except Federal holidays
Phone: (800) 683-0751 (press 1 to bypass the recorded message)
Email: IIPS_HelpDesk@e-center.doe.gov
Frequently Asked Questions:
https://e-center.doe.gov/iips/FAQs.nsf

All questions concerning the solicitation shall be submitted via IIPS to the Contract Specialist.

4. Forms

All applicable forms available for this solicitation are included as file attachments to this solicitation in IIPS. These forms are in writable PDF, MS Word, and MS Excel formats and include:

a. Standard Form 33, Solicitation, Offer and Award.
b. Cost Proposal Instructions.
c. Standard Form 328, List of foreign nationals planned to be supported by this effort at the time of submission and Certificate Pertaining to Foreign Interests.
d. NEPA Environmental Checklist Form (See Section II.B.5) is required from the Lead Organization only if the proposed work involves using explosives, energetic materials, or chemicals.

5. Preparing Your Submission

Register Early: If you and your contracting or grants office has not already done so, register in IIPS. The individual(s) in your organization who have the authority to enter the institution in a legally binding contract or agreement will need to register, as they are the ones who are required to submit the final proposal into IIPS. We **strongly** recommend all parties register at least two weeks prior to the closing date. Registration confirmation can take some time. Do not wait until the closing date to begin this process.

Practice: If you would like to practice submitting your proposal you may do so by clicking on the link to the test area on the solicitation main page. You may practice in this area as much as you like. Documents submitted into the test area are periodically deleted. Do not submit your proposal in this area.

6. Submitting Your Proposal

Transmit Early: Do not wait until the last minute. Submit your proposal into IIPS at least 48 hours prior to the deadline. If you encounter any submission problems, connectivity issues, etc. you may or may not have time to work them out before the solicitation closes. Proposals will not be able to transmit after the submission deadline.

IIPS will provide confirmation of a successful submission. If you encounter difficulties uploading your files, contact the IIPS help desk for assistance.

7. Questions

Frequently asked questions (and their answers) will be posted on the IIPS website at http://e-center.doe.gov (See "IIPS Tips", Section III.B.3.). Questions concerning this solicitation must be submitted using the IIPS website. Questions will be accepted from May 15 -29, 2009. Responses to questions will be posted on IIPS within one week of receipt. To submit a question, enter IIPS (http://e-center.doe.gov), click on "Browse Opportunities", click on "Enter IIPS", click on "Acquisition", find and click on "Solicitation DE-AR52-09NA29249", click on "Submit Question".

8. Amendments to the Solicitation

Amendments/Modifications will ***only*** be placed on IIPS homepage at http://e-center.doe.gov (see "IIPS Tips", Section III.B.3.). Hard copies will not be mailed. Only those parties **officially registered** with IIPS may enroll in the Solicitation Mailing List to receive e-mail notices that amendments, if any, to this solicitation, have been posted. Offerors are responsible for monitoring the IIPS site for the release of any amendments and information. NNSA reserves the right to extend the closing date for Proposals, if necessary.

IV. Proposal Evaluation

A. Review Process

A merit review process by subject matter experts will accomplish the merit review. The review and evaluation process will be conducted jointly by NNSA and AFRL.

Multiple on-line reviewers will evaluate proposals from July 6 – August 14, 2009 then the Merit Review Panels will meet September 1 – 4, 2009 to objectively evaluate the proposals on its own merit against the Evaluation Criteria 1-4 described in Section IV.B. The on-line and panel merit reviewers will consist of experts from academic institutions, private industry, FFRDCs, Air Force, NNSA, and/or other Government personnel. Non-Government evaluators are only advisors to the SEB. Finally, a Source Evaluation Board (SEB), which consists solely of Government personnel, will meet October 7, 2009 in line with the goal of making awards as early as possible in fiscal year 2010. The SEB will conduct the technical evaluation by evaluating the Technical Proposals according to all five Evaluation Criteria described in Section IV.B. before making their recommendations for negotiation to the Source Selection Authorities. NNSA and AFRL will each designate a Source Selection Authority (SSA). The NNSA SSA and AFRL SSA will determine which proposals will be accepted by each agency, with recommendations from the SEB.

The Government reserves the right to determine which agency funds which proposal.

Note: Non-Government evaluators may be used for reviewing the Technical Proposals. Non-Government evaluators are only advisors to the SEB. All reviewers are required to sign statements prior to reviewing a proposal attesting to no conflict-of-interest and non-disclosure or personal use of proposal/proprietary information. If the offeror has any concerns regarding the use of non-Government reviewers they should indicate their reasons for such concerns on the cover page. Additional questions or concerns may be directed to the Contract Specialist.

B. Evaluation Criteria

The criteria against which proposals will be reviewed are: Mission Relevance; Overall Scientific and Technical Merit; Risk Assessment; Research Duplication; and Management Plan and Budget taking into account Programmatic Balance & Value and Present & Past Performance. These criteria are detailed below.

*1. **Mission Relevance*** – Will the results improve National capabilities by advancing national technical means to detect, locate and identify nuclear explosions? What is the improvement over existing capabilities or capabilities under development?

*2. **Overall Scientific and Technical Merit*** – Is the project based on a solid understanding of the current state of science and technology? Is the proposed method appropriate?

*3. **Risk Assessment*** – What is the likelihood the research is achievable as proposed in pursuit of the stated mission objective? The qualifications, capabilities, and experience of the principal investigator, team leader, and key personnel as well as corporate capabilities and relevant experience will factor into this assessment.

*4. **Research Duplication*** – To what extent does the proposed work complement and/or avoid duplication of already ongoing or completed work? Specify which tasks could be deleted as duplicative to strengthen the proposal.

*5. **Management Plan and Budget taking into account Programmatic Balance & Value and Present & Past Performance*** – Are the budget and management plan reasonable?

The on-line and panel merit review evaluation will be based on Criteria 1-4, which are listed in descending order of importance. Criteria 1, 2 and 3 individually are significantly more important than Criterion 4.

The source evaluation board will evaluate the proposals against all five evaluation criteria. The combined evaluation of Criteria 1-4 is significantly more important than Criterion 5.

It is anticipated that pricing of this action will be based on adequate price competition. However, in-depth price or cost analysis will be conducted after selection prior to negotiation leading to award. The evaluation factors other than cost or price, when combined, are significantly more important than cost or price.

<u>Applicable to NNSA Awards Only</u>: NNSA intends to optimize awards to small businesses, small business lead teams, and joint ventures that qualify as small businesses. NNSA reserves the right to give preference to small businesses in the event the merit review outcomes contain equivalent ratings received by small business and large business/educational institution within the same topic area for the purpose of NNSA contract award.

C. Disclosure of Access to Contractor Technical and Financial Information Beyond Government Employees

The Air Force Research Laboratory's Nuclear Explosion Monitoring Research program office located at Hanscom Air Force Base, Massachusetts utilizes the services of a few contractor support personnel that provide administrative assistance to the government contract managers. The employers of these support personnel are either Lockheed Martin Information Systems & Global Services Division Headquartered, 6801 Rockledge Drive, Bethesda, MD 20817 local offices located at Hanscom AFB, Massachusetts, or Boston College Institute for Scientific Research, local offices located at Hanscom AFB, Massachusetts. In the performance of their duties they have full access to funding information as well as for Official Use Only (OUO). A non-disclosure agreement is in force for each individual.

The NNSA Office of Nonproliferation Research and Development (NA-22) in Washington, D.C. and the NNSA Service Center in Albuquerque, New Mexico have contractor support personnel that provide technical and administrative assistance to the government program/project managers. The employers of these support personnel are NAVARRO Research and Development, Inc., Westech International, and Lawrence Livermore National Security, LLC. In the performance of their duties they have full access to funding information as well as for Official Use Only (OUO). A non-disclosure agreement is in force for each individual.

V. Negotiation, Award, and Post-Award Requirements

A. Award and Notification

It is anticipated that selection decisions will be made during the first quarter of fiscal year 2010.

Written decision notifications will also be provided to the offerors. For successful proposals, written notification will be made by the funding organization (NNSA or AFRL). For unsuccessful proposals, NNSA will provide written notification. Unsuccessful proposals will be retained by the Government and will not be returned to unsuccessful offerors. After the decisions are announced, unsuccessful offerors may request a debriefing on an unsuccessful proposal to obtain more information on its strengths and weaknesses. A debriefing does not allow a proposal to be re-reviewed.

In addition, proposals selected to begin negotiations will be listed within three weeks of completion of the selection process at https://na22.nnsa.doe.gov/awards/Proposals.

B. Award Instrument

1. Contracts

Both NNSA and AFRL will comply with the applicable Federal Statues, Executive Orders, Office of Management and Budget (OMB) Circulars, in addition to agency-specific regulations. The resulting awards will incorporate the appropriate contract clauses, as applicable. Pursuant to DEAR 935.070, the regulations at 10 C.F.R. Part 733 regarding research misconduct will apply to the NNSA award(s).

2. Financial Assistance

In the event that a determination is made that award as a Financial Assistance Instrument is more appropriate, then additional forms will be required and recipients and sub-recipients of NNSA Financial Assistance shall comply with the applicable requirements of 10 CFR Part 600, Federal Statues, the OMB Circulars, and other Government-wide guidance implementing 10 CFR Part 600; and the requirements identified in Appendix A of 10 CFR Part 600. Appropriate provisions will be incorporated into any resulting financial assistance instrument as determined by the Contracting Officer. A Technology Investment Agreement in accordance with 10 CFR Part 603 is a potential award instrument; however, it may be used only when no other type of contract or financial assistance instrument is feasible or appropriate.

C. Patents, Data, and Copyrights

Appropriate intellectual property provisions will be incorporated in any resulting agreement in accordance with appropriate regulations as determined by the status of the offeror organization and the particular project.

Intellectual property (patents, data, and copyrights) will be treated for NNSA awards in accordance with 48 CFR 52.227(-1 through -23), 48 CFR 952.227 (DEAR), and 48 CFR 27 (contracts) and 10 CFR 600 (financial assistance).

For AFRL awards, intellectual property will be treated in accordance with FAR 52.227-11 and DoD FAR Supplements.

D. Program Management Requirements

NNSA or AFRL Program Management

The cognizant NNSA or AFRL federal program managers may conduct periodic reviews of the contractor to monitor progress and ensure alignment with the objectives of the program.

1. **Reporting Requirements**

   The following reports will be required:
   - Quarterly technical project status reports;
   - Monthly invoicing with backup accounting ledger information;
   - Annual technical progress report at Monitoring Research Review (MRR); and
   - Final technical report.

2. **Coordination with Product Integrator**

   For all BAA10 awards, the lead principal investigator will be assigned to work with an NNSA Product Integrator "subject matter expert" who will ensure that data and research products resulting from the proposal can be considered for integration into operationally useful products called Integrated Research Products (IRPs). IRPs may be input to the AFTAC Knowledge Base, if appropriate. The Knowledge Base is a well-defined database of data and research products for use in nuclear explosion monitoring operations. Information about the Knowledge Base and the integration process can be found at https://na22.nnsa.doe.gov/KnowledgeBase. The product integrator will be specified upon award and can be looked up along with the specific award identification information at https://na22.nnsa.doe.gov/awards/database .

   Offerors should plan for at least annual meetings with the assigned Product Integrator to facilitate the appropriate integration of research products into the Knowledge Base or other IRPs. This meeting can be accomplished at the Monitoring Research Review or may be a separate meeting.

3. Program Reviews

Two program reviews will be held per year.

One review will be the annual Monitoring Research Review (MRR) where the lead Principal Investigator will be required to prepare a paper and a poster presentation. The MRR is held in September alternating between the east and west coasts. The date and location for the MRR 2009 is September 21-23, 2009 in Tucson, AZ. Information regarding the MRR can be found on http://www.monitoringresearchreview.com. The second review will be a smaller focused review (10-20 contracts) where the lead investigator will provide a summary of work in progress. For proposal preparation purposes, it may be assumed the second review will be in the Midwest and will not require a conference fee.

4. Use of PASSCAL Instruments

Offerors who plan to use PASSCAL instruments should state in the proposal the instruments that will be requested and when they will be required.

5. Explosives/Energetic Experiments

Offerors who plan to conduct experiments with explosives or energetic devices should plan for activities and documentation to assure that experiments are well designed with design reviews held with all stakeholders, are coordinated with all stakeholders, are evaluated for NEPA/environmental issues, are in compliance with local requirements/permits, are conducted in a safe manner, and are conducted to not interfere/affect the operations of other already installed measurement/detection systems.

E. Other Requirements

1. NAICS and CDFA

For Acquisition awards, the North American Industry Classification System (NAICS) applies. The NAICS code that applies to this solicitation is 541710.
(See http://www.naics.com)

The Catalog of Federal Domestic Assistance (CFDA) number for this solicitation is 81.113, Nonproliferation and National Security Research. This information is provided for completion of block 10 of the Proposal for Federal Assistance, Standard Form 424, in the event any awards are made as Financial Assistance Instruments (See www.cfda.gov/).

2. Export Control

Awardees will be required to comply with U.S. regulations on export control. Additional information may be obtained from the Department of Commerce, Bureau of Industry and Security (Formerly Bureau of Export Administration) at http://www.bis.doc.gov/.

3. Sub-Contracts to Debarred and Suspended Parties

Contractors, recipients, and participants, at any tier, must not make any subcontract or permit any subcontract to any party which is debarred, suspended, or is otherwise excluded from or ineligible for participation in Federal Assistance and Acquisition programs under Executive Order 12549, "Debarment and Suspension" or is otherwise ineligible hereunder.

4. Notice Regarding Eligible/Ineligible Activities

Eligible activities under this program include those which describe and promote the understanding of scientific and technical aspects of specific energy technologies, but not those that encourage or support political activities such as the collection and dissemination of information related to potential, planned or pending legislation.

5. Lobbying Restrictions

None of the funds obligated shall be made available for any activity or the publication or distribution of literature that in any way tends to promote public support or opposition to any legislative proposal on which Congressional action is not complete. This restriction is in addition to those prescribed elsewhere in statute and regulation.

6. Notice Regarding Purchase of American-Made Equipment and Products Sense of Congress

It is the sense of the Congress that, to the greatest extent practicable, all equipment and products purchased with funds made available should be American-made.

7. Compliance with Buy American Act

Compliance will be required with Sections 2 through 4 of the Act of March 3, 1933 (41 U.S.C. 10a – 10d, popularly known as the "Buy American Act"). The offeror should review the provisions of the Act to ensure that expenditures made under an Award are in accordance with the Buy American Act.

8. Additional Information

Offerors are advised that only Contracting Officers are legally authorized to commit the Government. It is highly recommended that proposals contain a thoroughly realized technical approach with clear and descriptive narrative and a detailed cost breakdown with rationale for the proposed costs.

The projects awarded by NNSA as a result of this solicitation will be administered by the NNSA Service Center. Negotiation, award, and administration will be in accordance with 48 CFR Chapters 1 and 9 [Federal Acquisition Regulation (FAR) and Department of Energy Acquisition Regulation (DEAR)] if a contract is awarded. The FAR may be accessed at http://www.acqnet.gov/far/. The DEAR may be accessed at http://management.energy.gov/DEAR.htm. If a financial assistance instrument is awarded, it will be governed by the DOE financial assistance regulations at 10 CFR 600.

Projects awarded by AFRL as a result of this solicitation will be administered by the AFRL/VSBYE and ESC/PKR, at Hanscom AFB. Negotiation, award, and administration will be in accordance with FAR, DoD, and AFMC acquisition regulations.

VI. Solicitation Definitions

"**Award**" means the written documentation executed by a NNSA or AFRL Contracting Officer, after an offeror is selected, which contains the terms and conditions for providing a contract or financial assistance to the offeror(s).

"Broad Agency Announcement (BAA)" means a general announcement of an agency's research interest including criteria for selecting proposals and soliciting the participation of all offerors capable of satisfying the Government's needs (see FAR 6.102(d)(2)).

"Budget" means the cost expenditure plan submitted in the Proposal, including both the NNSA and AFRL contribution and that provided by the offeror institution(s).

"**Budget Period**" means an interval of time, specified in the award, into which a project is divided for budgeting and funding purposes.

"**CFDA**" is the Catalog of Federal Domestic Assistance. The CFDA provides information on Federal Assistance Programs. Information on Federal Grant Programs can be found at http://www.cfda.gov .

"**Contract**" means a mutually binding legal relationship obligating the seller (offeror) to furnish the supplies or services and the buyer (the Government) to pay for them. It includes all types of commitments that obligate the Government to an expenditure of appropriated funds and that, except as otherwise authorized, are in writing.

"**Contracting Officer**" means a person with the authority to enter into, administer, and/or terminate contracts and make related determinations and findings. The term includes certain authorized representatives of the contracting officer acting within the limits of their authority as delegated by the contracting officer.

"**Export Control**" refers to government rules and regulations that govern the transfer of commodities (equipment, hardware, or materiel), technologies (technical data, information, or assistance), and software (commercial or custom) to any non-U.S. entity or individual, wherever the transfer may take place.

"**FFRDC**" refers to a Federally Funded Research and Development Center such as the NNSA National Laboratories.

"**Financial Assistance**" means the transfer of money or property to a recipient or sub-recipient to accomplish a public purpose of support authorized by Federal Statute through Research Grants or Cooperative Agreements and sub-contracts. In NNSA, it does not include direct loans, loan guarantees, price agreements, purchase agreements, Cooperative Research and Development Agreements (CRADAs), or any other type of financial incentive instrument.

"Industry Interactive Procurement System (IIPS)" means the Internet based, electronic system used to submit proposals.

"**Key Personnel**" mean the individuals who will have significant roles in planning and implementation of the proposed project.

"**Knowledge Base**" means the state-of-art computerized database of research products (primarily seismic) that are structured for operational use in the US National Data Center. Product integration from research to operations is a central thrust of the NNSA Ground-Based Nuclear Explosion Monitoring Research and Development Program and the Knowledge Base is instrumental in successful transitioning of research to operations. For more information see https://na22.nnsa.doe.gov/KnowledgeBase.

"**Late Proposal Submission**" means that if ***any*** part of the proposal submitted into the Industry Interactive Procurement System (IIPS) was time-stamped after the submission deadline it will be disqualified from further consideration.

"Merit Review" means a thorough, consistent, and objective examination of proposals based on pre-established criteria by persons who are independent of those submitting the proposals and who are subject matter experts in the field of endeavor.

"Offeror" the term "Offeror" is synonymous with "Proposer". Offeror as used in the Federal Acquisition Regulations (FAR) and as applied to this solicitation means the university, company, government agency, or other organization committed to the execution of the proposed project under the direction of its Principal Investigator.

"**Principal Investigator**" as applied to proposals under this solicitation means the single individual responsible for the management of the proposal/project. In the case of teams, each organization will specify a principal investigator, with one principal investigator designated as the "lead." The lead principal investigator will be from the organization designated the overall technical lead and will be accountable for the full team effort.

"Product Integrator" means the person responsible for facilitating integration of data and research results and products developed under this solicitation into the NNSA Knowledge Base.

"**Project**" means the set of activities described in a Proposal or other document that is approved by NNSA and AFRL for financial assistance or a contract (whether such financial assistance represents all or only a portion of the support necessary to carry out those activities).

"**Project Period**" means the total period of time indicated in an award during which NNSA expects to provide support contingent upon satisfactory progress and available funds. A Project Period may consist of one or more Budget Periods and may be extended by NNSA.

"**Proposal**" means the documentation submitted in response to this solicitation.

"Recipient" or "Awardee" means the entity that receives an award from NNSA or AFRL and is financially accountable for the use of any Government funds provided for the performance of the project, and is legally responsible for carrying out the terms and conditions of the award.

"Subcontract" means any contract (See "Contract" above) entered into by a subcontractor to furnish supplies or services for performance of a prime contract or a subcontract.

"**Solicitation**" means any request to submit offers or quotations to the Government. As used in this document, "solicitation" is synonymous with "Broad Agency Announcement" or "BAA."

"**Teaming**" means an arrangement in which two or more organizations work together on a proposal and subsequent award with one individual designated as the lead principal investigator responsible for the integration, management, and reporting for the team.